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09/766,336	01/18/2001	Michael Burrows	9772-0304-999	7722

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EXAMINER
PHAM, HUNG Q

ART UNIT	PAPER NUMBER
2162	

DATE MAILED: 04/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/766,336	BURROWS ET AL.
	Examiner	Art Unit
	HUNG Q PHAM	2162

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 January 2005*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *25-29* is/are allowed.

6)☒ Claim(s) *1-3,8-11,16-19 and 24* is/are rejected.

7)☒ Claim(s) *4-7,12-15 and 20-23* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 01/24/2005 have been fully considered but they are

not persuasive.

- As argued by applicants:

     Nowhere does Broder teach or suggest that a set of deletes and/or adds represent page identifiers that
     identify pages.

Examiner respectfully traverses because of the following reasons:

As illustrated in FIG 3, Col. 3, Line 57-Col. 4, Line 24, URLs of graph 200 are encoded

and stored in list 340. As shown in FIG. 4 (Col. 4, Lines 36-56), URL links of graph 200,

e.g. inbound and inbound links, represented by NODE IDs are sorted into INLIST and

OUTLIST TABLE, the entry of INLIST and OUTLIST is a group of nodes, either points to

or pointed by a particular node. As shown in FIG. 5 (Col. 4, Lines 57-65), entries of

INLIST and OUTLIST TABLE that corresponds to particular nodes are stored in ARRAY

500 using INLIST POINTER and OUTLIST POINTER point to the entries of INLIST and

OUTLIST TABLE, the node of graph 200 that corresponds to a set of inbound and

outbound links is specified by a URL pointer points to an encoded entry in list 340. As

seen, for each respective row in ARRAY 500, a reference row in list 340 is identified by

NODE ID, wherein the respective row is encoded as a pointer or identifier for the

identified reference row. Referring back to FIG. 3, the field 344 contains encoded page

identifiers that identify pages in the identified reference row not in the respective row,

and as in FIG. 5, INLIST and OUTLIST entry as a set of adds representing page

identifiers that identify pages in the respective row not in the identified reference row,

e.g., by using an example as in Col. 4, Lines 1-18, the field 344 of entry 341 contains an encoded identifier of www.foobar.com/ that is not in the entry of ARRAY 500 correspond to www.foobar.com/gandalf.html, and the INLIST and OUTLIST contain inbound and outbound node IDs that identify pages not in the entry 341.

• In response to applicant's argument with respect to claims 2, 10 and 18 that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Shay teaches Huffman coding values for data compression (Shay, pages 188-192), and the set of INLIST and OUTLIST could be encoded by using Huffman coding values as taught by Shay to reduce the size of the database.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 9 and 17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As in claims 1, 9 and 17, *a set of deletes representing page identifiers that identify pages in the identified reference row not in the respective row, and a set of adds representing page identifiers that identify pages in the respective row not in the identified reference row* was not described in the specification (as illustrated at page 2, the respective row is encoded as an identifier for the identified reference row, if any, a set of deletes representing page identifiers in the identified reference row not in the respective row, and a set of adds representing page identifiers in the respective row not in the identified reference row).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

Claims 1, 3, 8, 9, 11, 16, 17, 19 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Broder et al. [USP 6,073,135].

Regarding claims 1, 9 and 17, Broder teaches a method, computer program and

system for storing page link information by, the Broder method, program, system

comprising:

a central processing unit for performing computations in accordance with stored procedures with *a network interface for accessing remotely located computers via a network; memory, coupled to the central processing unit, for storing procedures and data* (FIG. 1);

obtaining page link information for a set of pages, the page link information including for each page in the set a row of page identifiers of other pages (FIG. 4, Col. 4, Lines 36-42);

arranging the rows of page identifiers in a particular order (Col. 4, Lines 43-46),

for each respective row: identifying a reference row, if any, that best matches the respective row in accordance with predefined row match criteria; and encoding the respective row as an identifier for the identified reference row (as shown in FIG. 5, Col. 4, Lines 57-65, entries of INLIST

and OUTLIST TABLE that corresponds to particular nodes are stored in ARRAY 500

using INLIST POINTER and OUTLIST POINTER point to the entries of INLIST and

OUTLIST TABLE, the node of graph 200 that corresponds to a set of inbound and

outbound links is specified by a URL pointer points to an encoded entry in list 340. As

seen, for each respective row in ARRAY 500, a reference row in list 340 is identified by

NODE ID, wherein the respective row is encoded as a pointer or identifier for the

identified reference row), *if any, a set of deletes representing page identifiers that identify pages in*

the identified reference row not in the respective row, and a set of adds representing page identifiers

that identify pages in the respective row not in the identified reference row (referring back to FIG.

3, the field 344 as a set of deletes contains encoded page identifiers that, obviously,

identify pages in the identified reference row not in the respective row, and as in FIG. 5,

INLIST and OUTLIST entry as a set of adds, obviously, representing page identifiers

that identify pages in the respective row not in the identified reference row, e.g., using

an example as in Col. 4, Lines 1-18, the field 344 of entry 341 contains an encoded

identifier of www.foobar.com/ that is not in the entry of ARRAY 500 correspond to

www.foobar.com/gandalf.html, and the INLIST and OUTLIST contain inbound and

outbound node IDs that identify pages not in the entry 341).

Broder does not explicitly teaches *a web crawler module, executable by the central*

processing unit, for downloading a set of pages from remotely located servers via the network

interface. However, a Web crawler is used to build relatively small databases of local

linkage information also disclosed by Broder as in Col. 1, Lines 43-48.

Therefore, it would have been obvious for one of ordinary skill in the art at the

time the invention was made to modify the Broder method by using a web crawler for

the input data.

Regarding claims 3, 11 and 19, Broder teaches all the claim subject matters as

discussed in claims 1, 9 and 17, Broder further discloses *delta encoding the set of deletes and*

delta encoding the set of adds for each respective row (FIG. 3).

Regarding claims 8, 16 and 24, Broder teaches all the claim subject matters as

discussed in claims 1, 9 and 7, but does not explicitly teach *when no reference row exists for*

a respective row, encoding the respective row by encoding a null reference row identifier and a set of

adds representing the page identifiers in the respective row. However, as shown in FIG. 3, if

there is no URLs is in common with the input URL 310, obviously, field 343 will be NULL

and the entry 341 representing the page identifier of the input only. Therefore, it would

have been obvious for one of ordinary skill in the art at the time the invention was made

to include the step of encoding a null for the URL if there is no common URL in the input

data in order to represent and navigate the connectivity of Web pages.

Claims 2, 10 and 18 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Broder et al. [USP 6,073,135] in view of Shay [Understanding

Data Communication & Networks].

Regarding claims 2, 10 and 18, Broder teaches all the claim subject matters as

discussed in claims 1, 9 and 17, but does not disclose *Huffman coding values representing*

the set of deletes and the set of adds for each respective row. Shay teaches Huffman coding

values for data compression (Shay, pages 188-192). Therefore, it would have been

obvious for one of ordinary skill in the art at the time the invention was made to use

Huffman coding values as taught by Shay to encode the delta in order to reduce the

size of the database.

Allowable Subject Matter

Claims 25-29 are allowed.

Regarding claim 25-29, Broder also discloses a computer implemented method

of storing web links of web pages, but Broder fails to teach or suggest the technique of

encoding web links associated with a particular web page as (2) a list of delete numbers that represent

identification numbers included in the list of identification numbers of the another identification

number but not associated as web links with the particular web page, and (3) a list of add numbers that

represent identification numbers associated as web links with the particular web page but not included

in the list of identification numbers of the another identification number.

Claims 4-7, 12-15, 20-23 are objected to as being dependent upon a rejected

base claim, but would be allowable if rewritten in independent form including all

of the limitations of the base claim and any intervening claims.

Regarding claims 4, 12 and 20, Broder teaches all the claim subject matters as

discussed in claim 1, but fails to teach or suggest *Huffman coding the delta encoded set of*

deletes and delta encoded set of adds for each respective row.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUNG Q PHAM whose telephone number is 571-272-4040. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN E BREENE can be reached on 571-272-4107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Examiner Hung Pham
March 29, 2005

SHAHID ALAM
PRIMARY EXAMINER